UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R037XA010NM

Site Name: Cobbly Hills

Precipitation or Climate Zone: 7 to 10 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site usually occurs adjacent to the Animal and San Juan rivers and their major drainages. It occurs as moderately to steep hills and terraces. Exposures are variable. Slopes range from 25 to 55 percent. Elevations range from 5,500 to 7,200 feet above sea level.

Land Form:

1. Hillside
2. Terrace
3.

Aspect:

1. N/A
2.
3.

	Minimum	Maximum
Elevation (feet)	5,500	7,200
Slope (percent)	25	55
Water Table Depth (inches)	42	>72

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

This site has an arid, mild, dry climate with distinct seasonal temperature variations and large annual and diurnal temperature changes.

Mean annual precipitation varies from 7 to 10 inches. Deviations of 4 inches or more are quite common. Distribution is 65 percent during the native plant growth period, which is from April through September. May and June are the dry months. During July, August, and September. 3.5 inches of precipitation influence the presence and production of warm-season plants. Late fall and winter moisture is conducive to the production of cool-season plants, which usually begin growth in March and end with plant maturity and seed dissemination. This usually takes place in the early part of June when the moisture deficiency and warmer temperatures occur. The Gulf of Mexico is the principal source of moisture for summer precipitation, which is characterized by brief afternoon thunderstorms. Winter moisture occurs as light rain or snow.

Temperatures vary from a mean monthly of 75 degrees F in July to 27 degrees F in January. From a maximum of 106 degrees F to a minimum of 35 degrees F below zero. The average last killing frost in the spring is May 8, and the first killing frost in the fall is October 10. The frost-free season is approximately 160 days. Temperatures are conducive to native grass and forb growth from April through September. Maximum shrub growth occurs in the spring months.

The wind blows most frequently from an easterly direction, however, a majority of the stronger winds (10 to 25 miles per hour) are from a westerly quadrant. Spring is the windiest season. Average hourly wind velocities are near 6 mile per hour. Spring and summer winds increase transpiration rates of native plants and rapidly dry the surface soil. Small soil particles are often displaced by the wind near the soil surface and often results in structural damage to native plants, especially young seedlings.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	114	151
Freeze-free period (days):	143	177
Mean annual precipitation (inches):	7	10

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.46	.70	12.7	43.1
February	.46	.74	18.4	50.8
March	.54	.70	22.7	60.4
April	.42	.56	29.3	70.0
May	.38	.62	37.6	79.5
June	.29	.68	46.6	90.0
July	.68	1.46	54.8	94.6
August	.79	1.83	53.1	91.8
September	.80	1.13	44.3	85.6
October	.78	1.30	31.7	72.4
November	.52	.68	20.9	56.3
December	.54	.64	12.8	46.6

Climate Stations:

					Period		
Station ID	291647	Location	Chaco Canyon Natl. Monument, NM	From:	06/01/22	To:	12/31/01
Station ID	293134	Location	Farmington 3NE, NM	From:	1971	To:	2000
Station ID	293340	Location	Fruitland 2E, NM	From:	01/01/14	To:	12/31/01
Station ID	296465	Location	Otis, NM	From:	02/01/14	To:	12/31/01
Station ID	298284	Location	Shiprock, NM	From:	08/01/26	To:	12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

Surface textures are characterized by the smooth gravels and cobbles, which almost entirely cover the surface. Textures range from gravelly and cobbly sandy loams to loams. Subsoils are sandy loams to loams. Soil depths vary from moderately deep to deep. Permeability is rapid to moderate, available water-holding capacity is low to moderate and runoff is medium depending on coarse fragments, cover, exposure and slope.

Parent Material Kind: Mass movement deposits
Parent Material Origin: Mixed

Surface Texture:

1. Gravelly sandy loam
2. Gravelly loam
3. Cobbly sandy loam
4. Cobbly loam
5. Loam

Surface Texture Modifier:

1. Gravel
2. Cobble
3.

Subsurface Texture Group: Sandy
Surface Fragments <=3" (% Cover): 15 to 35
Surface Fragments >3" (% Cover): 15 to 35

Subsurface Fragments <=3" (%Volume): 15 to 35
Subsurface Fragments >=3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	Somewhat poorly	Moderate
Permeability Class:	Slow	Rapid
Depth (inches):	60	>72
Electrical Conductivity (mmhos/cm):	4.00	8.00
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	7.9	9.0
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	3	9
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
The vegetation on this site is a grassland with only a few scattered trees and shrubs on the site, usually on the north and east exposures. This site is dissected by drainages, which usually are supporting many trees. Forbs are common on the site, but most noticeable when in bloom.

Canopy Cover:	
Trees, shrubs and half-shrubs	5
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	20
Bare ground	20
Surface gravel	20
Surface cobble and stone	30
Litter (percent)	10
Litter (average depth in cm.)	1

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	340	510	680
Forb	20	30	40
Tree/Shrub/Vine	12	18	24
Lichen			
Moss			
Microbiotic Crusts			
Total	400	600	800

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	HECO26 HENE5	Needleandthread New Mexico Feathergrass	120 – 180	120 – 180
2	PLJA	Galleta	60 – 90	60 – 90
3	BOGR2	Blue Grama	60 – 90	60 – 90
4	ACHY	Indian Ricegrass	30 – 48	30 – 48
5	POFE KOMA	Muttongrass Prairie Junegrass	30 – 48	30 – 48
6	BOER4	Black Grama	0 – 30	0 – 30
7	BOCU	Sideoats Grama	18 – 30	18 – 30
8	BRTE 2GRAM	Cheatgrass* Other Grasses	18 – 30	18 - 30

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
9	CACO17 SPHAE 2FORB	Indian Paintbrush Globemallow spp. Other Forbs	18 – 42	18 - 42

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
10	ARTR2 ATCA2 CHRYO	Big Sagebrush Fourwing Saltbush Rabbitbrush spp.	6 – 18	6 – 18
11	JUMO JUNIP PIED	Oneseed Juniper Juniper spp. Pinyon Pine	0 – 12	0 - 12

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

*Introduced but nationalized.

Plant Growth Curves

Growth Curve ID **0910NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Grassland with scattered trees and shrubs with forbs being common.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	5	7	10	10	25	30	10	3	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

No Data

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations	
Soil Series	**Hydrologic Group**
Werlog	C

Recreational Uses:

This site offers natural landscape aesthetics with wildflowers as an added beauty.

Wood Products:

This site has no significant potential for wood products.

Other Products:

Grazing:

Approximately 90 percent of the vegetation produced is suitable for grazing or browsing by livestock and wildlife.

Under pressure of uncontrolled grazing, the potential plant community deteriorates. There is a marked increase in amount of shrubs and forbs; shrubs dominate the site.

Other Information:	
Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month	
Similarity Index	**Ac/AUM**
100 - 76	4.0 – 5.0
75 – 51	5.0 – 7.5
50 – 26	7.5 – 15.0
25 – 0	15.0+

Plant Part	Code	Species Preference	Code
Stems	**S**	**None Selected**	**NS**
Leaves	**L**	**Preferred**	**P**
Flowers	**F**	**Desirable**	**D**
Fruits/Seeds	**F/S**	**Undesirable**	**U**
Entire Plant	**EP**	**Not Consumed**	**NC**
Underground Parts	**UP**	**Emergency**	**E**
		Toxic	**T**

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Needleandthread	Hesperostipa comata	EP	D	D	P	P	P	D	D	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Muttongrass	Poa fendleriana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Fourwing Saltbush	Atriplex canescens	L/S	P	P	P	P	P	D	D	D	D	D	D	P

Animal Kind: Wildlife
Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Fourwing Saltbush	Atriplex canescens	L/S	P	P	D	D	D	D	D	D	D	D	D	P
Globemallow spp.	Sphaeralcea spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **San Juan**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the San Juan River Valley, Mesas and Plateaus 37 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys : San Juan, McKinley.

Characteristic Soils Are:	
Werlog	
Other Soils included are:	

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	03/07/79	Don Sylvester	03/07/79

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	07/10/02	George Chavez	2/12/03